In the Claims:

Please replace all prior versions, and listings, of claims in the application with the following list of claims.

1. (Previously presented) A method comprising:

immobilizing a protein species and a single sequence of oligonucleotide identifier independently on a common colloid particle surface, each on a different part of the surface to participate in a chemical or biological interaction, wherein the protein species is immobilized on the surface via a self-assembled monolayer;

allowing the interaction to occur while the protein species and the oligonucleotide identifier are immobilized on the common surface; and

determining participation of the protein species in the chemical or biological interaction by identifying the oligonucleotide identifier immobilized on the surface, comprising separating the oligonucleotide identifier from the surface and then identifying the oligonucleotide identifier, wherein the colloid particle is less than 500 nanometers cross section in any dimension.

2-118. (Canceled)

119. (Previously presented) The method according to claim 1, wherein the colloid particle is inorganic or organic, polymeric, ceramic, semiconductor, metallic, non-metallic, crystalline, amorphous, or a combination thereof.

120. (Previously presented) The method as in claim 119, wherein the colloid particle is gold.

121. (Canceled)

122. (Previously presented) The method as in claim 1, wherein the protein species is immobilized on the surface via a metal binding tag – metal – chelate linkage.

123. (Canceled)

124. (Previously presented) The method as in claim 1, wherein the oligonucleotide identifier is immobilized on the surface via a self-assembled monolayer.

125. (Previously presented) The method as in claim 1, wherein the oligonucleotide identifier is identified via fluorescent signal.

126. (Canceled)

127. (Previously presented) The method as in claim 132, wherein each of the first and second surface is a colloid particle.

128. (Previously presented) The method as in claim 1, wherein the oligonucleotide identifier is identified by a complementary oligonucleotide having a first portion complementary to the oligonucleotide identifier and a second portion complementary to a second oligonucleotide identifier.

129. (Previously presented) The method as in claim 132, comprising further allowing a first protein species, immobilized on a first surface, to chemically or biologically interact with a second chemical or biological species, immobilized on a second surface; and

determining the chemical or biological interaction by identifying an interaction hybridization identifier that is complementary to a combination of a first oligonucleotide identifier immobilized on the first surface and a second oligonucleotide identifier immobilized on the second surface.

130. (Canceled)

131. (Previously presented) The method as in claim 132 comprising, prior to the identifying step, separating any non-hybridized oligonucleotide.

132. (Currently amended) A method for determining interactions between chemical or biological species, comprising:

providing a first protein species, immobilized on a first colloid particle surface, and a single sequence of first oligonucleotide identifier independently immobilized on the first surface, each on a different part of the first surface, wherein the first protein species is immobilized on the first surface via a self-assembled monolayer;

providing a second chemical or biological species, immobilized on a second surface;

allowing the first protein species bound to the first surface to participate in a chemical or biological interaction with the second species bound to the second surface;

determining participation of the first and second species in the interaction; and

determining the identity of the first oligonucleotide identifier, thereby identifying the first protein species, wherein the identity determining step comprises separating the oligonucleotide identifier from the surface and then identifying the oligonucleotide identifier, wherein the first colloid particle is less than 500 nanometers cross section in any dimension.

133. (Previously presented) The method as in claim 1, wherein the oligonucleotide identifier is identified via PCR.

134. (Previously presented) The method as in claim 132, wherein the oligonucleotide identifier is identified via PCR.

135. (Canceled)

136. (Previously presented) The method as in claim 1, wherein the oligonucleotide identifier is identified via polynucleotide hybridization.

137. (Previously presented) The method as in claim 1, wherein the oligonucleotide identifier is identified via polynucleotide sequencing.

138. (Previously presented) The method as in claim 127, wherein the colloid particle is inorganic or organic, polymeric, ceramic, semiconductor, metallic, non-metallic, crystalline, amorphous, or a combination thereof.

139. (Previously presented) The method as in claim 138, wherein the colloid particle is gold.

140. (Previously presented) The method as in claim 132, wherein the protein species is immobilized on the surface via a metal binding tag – metal – chelate linkage.

141. (Previously presented) The method as in claim 132, wherein the oligonucleotide identifier is identified via fluorescent signal.

142. (Previously presented) The method as in claim 132, wherein the oligonucleotide identifier is identified via polynucleotide hybridization.

143. (Previously presented) The method as in claim 132, wherein the oligonucleotide identifier is identified via polynucleotide sequencing.

144. (Previously presented) The method according to claim 1, wherein the colloid particle is less than 250 nm cross section in any dimension.

145. (Previously presented) The method according to claim 144, wherein the colloid particle is less than 100 nm cross section in any dimension.

146. (Previously presented) The method according to claim 145, wherein the colloid particle is 2-30 nm cross section in any dimension.

147. (Previously presented) The method according to claim 146, wherein the colloid particle is 10-30 nm cross section in any dimension.

148. (Previously presented) The method according to claim 147, wherein the colloid particle is 2-10 nm cross section in any dimension.

149. (Previously presented) The method according to claim 132, wherein the colloid particle is less than 250 nm cross section in any dimension.

150. (Previously presented) The method according to claim 149, wherein the colloid particle is less than 100 nm cross section in any dimension.

151. (Previously presented) The method according to claim 150, wherein the colloid particle is 2-30 nm cross section in any dimension.

152. (Previously presented) The method according to claim 151, wherein the colloid particle is 10-30 nm cross section in any dimension.

153. (Previously presented) The method according to claim 152, wherein the colloid particle is 2-10 nm cross section in any dimension.